

Remarks/Arguments:

Claims 1-24 have been amended. No new matter is introduced herein. Claims 1-24 are pending.

Applicant appreciates the courtesy extended to their representatives by Examiner Williams during the telephone interview of October 19, 2009. During the course of the interview, Applicant's representatives discussed differences between Tsuji et al. (U.S. 2004/0056776), Hisada et al. (U.S. 6,043,752) and Applicant's proposed amended claim 1. No agreement was reached. The Examiner maintained that aspects of the invention are better described as method claims, and indicated that if independent method claims were added, a restriction requirement would not be issued.

Claim 1 has been amended to include means plus function language. Namely, that the immobilizer unit and the portable unit include respective first and second data processor means. In addition, claim 1 has been amended to clarify that the first and second data processor means authenticate each other by: 1) a first authentication using first data for mutual authentication and 2) a second authentication using second data for mutual authentication. No new matter is introduced herein. Claims 2-4 have been amended similar to claim 1. Basis for the amendment can be found, for example, at page 6, line 9 - page 8, line 25 and Figs. 2 and 3 of the subject specification. Claims 5-24 have been amended to correspond with respective claim 1-4.

Claims 5, 10, 15 and 20 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, it is asserted that the phrase "the second accumulation data," recited in "lines 8 and 14 of claim 5" lacks antecedent basis. Claims 10, 15 and 20 are rejected for similar reasons. Applicant respectfully disagrees. Applicant notes that lines 9-10 of claim 5, in Applicant's amendment of July 27, 2009, initially recites that the first data processor generates and stores second accumulation data. Thus, line 12 of claim 5 refers to the "second accumulation data" first recited at line 10 of claim 5. Accordingly, "the second accumulation data" recited in line 12 of claim 5 includes proper antecedent basis. Claims 10, 15 and 20 include language similar to claim 5 and include proper antecedent basis, for at least

similar reasons as claim 5. Thus, Applicant respectfully requests that the rejection of claims 5, 10, 15 and 20 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 1-24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuji et al. (U.S. 2004/0056776) in view of Hisada et al. (U.S. 6,043,752). It is respectfully submitted, however, that these claims are patentable over the cited art for the reasons set forth below.

Claim 1, as amended, includes features neither disclosed nor suggested by the cited art, namely:

... an immobilizer unit including ... first data processor means ...

... a portable unit including ... second data processor means ...

... the first data processor means and the second data processor means include means for authenticating each other by a first authentication comprising: (1) the first data processor means transmitting ... an encrypted data based on the first data for mutual authentication stored in the first storage and (2) the second data processor means receiving the encrypted data ... decrypting the encrypted data and comparing the decrypted data to the first data for mutual authentication stored in the third storage; and

... the first data processor means and the second data processor means include means for authenticating each other by a second authentication, responsive to the first authentication between the first data processor means and the second data processor means, comprising: 1) the second data processor means transmitting the second data for mutual authentication stored in the fourth storage ... 2) the first data processor means further storing, into the second storage, the second data for mutual authentication ... and transmitting the second data for mutual authentication stored in the second storage ... and 3) the second data processor means further storing, into the third storage, the second data for mutual authentication ...
(Emphasis Added)

Although not identical to claim 1, claims 2-4 include similar recitations.

Applicant's claims 1-4 relate to: 1) an immobilizer unit including first data processor means and 2) a portable unit including second data processor means. As shown in applicant's Figs. 2 and 10-12, a mutual authentication between the first and

second data processor means (of the respective immobilizer unit and portable unit) includes: 1) passing and comparing first data stored in storage of each of the immobilizer unit and portable unit via a first authentication and 2) passing second data stored (or generated) in one of the units to the other unit via a second authentication. As described on page 8, lines 23-25 and page 10, line 25 page 11, line 2 of the subject specification, the second data is used to set the portable device to the immobilizer unit.

Tsuji et al. disclose, in Fig. 1, a remote control system including transmitter 1 and receiver 2. Transmitter 1 includes microprocessor 11 which enciphers a rolling code and uses the enciphered rolling code to produce a transmission code. (Paragraphs [0037-0041] and [0053]). Receiver 2 receives the transmission code from transmitter 1 and deciphers the enciphered rolling code [0042-0044].

Tsuji et al. also disclose, in Fig. 10, an electronic key system including portable unit 30, vehicle transmitter 33 and wireless receiver 34. Portable unit 30 includes a transmitting/receiving circuit for receiving a challenge code signal (from transmitter 33) and transmitting an enciphered challenge code signal (to wireless receiver 34). Portable unit 30 includes a RAM for storing an ID code of portable unit and an enciphering table (Fig. 11). (Paragraphs [0083-0085]).

At Figs. 17 and 18, Tsuji et al. disclose a key code registration between portable unit 30 and vehicle 32. As shown in Fig. 17, portable unit 30 produces and transmits a transmission code including an ID code and an enciphered key code to vehicle 32. (Paragraphs [0109-0117]). As shown in Fig. 18, vehicle 32 receives the transmission code from portable unit 30, extracts the ID code and restores the enciphered key code. Vehicle 32 also compares the extracted ID code with a stored ID code of security ECU 35 to determine whether to store the restored key code. (Paragraphs [0118-0121]).

Tsuji et al., however, do not disclose or suggest that first and second data processor means includes means for authenticating each other by: 1) a first authentication which includes passing and comparing first data between an immobilizer unit and a portable unit and 2) a second authentication which includes passing second data between the immobilizer unit and the portable unit, as required

by claim 1. Tsuji et al. do not teach a second authentication, responsive to the first authentication using second data. Tsuji et al. only teach 1) a portable unit which receives a challenge code and transmits an enciphered challenge code and 2) performing a key code registration by matching an ID code transmitted from portable unit 30 with a stored ID code in vehicle 32. Furthermore, as acknowledged by the Examiner on page 6 of the Office Action, Tsuji et al. do not disclose that the data transmitted from the first processor means is encrypted, as required by claim 1. Thus, Tsuji et al. do not include all of the features of claim 1.

Hisada et al. disclose, in Fig. 1, a vehicle security system including vehicle control unit 30 and remote-control unit 11. Vehicle control unit 30 produces a cryptographic code and remote-control unit 11 produces a cipher system code in response to the cryptographic code. (Col. 7, line 47 - Col. 8, line 5 and Col. 16, lines 48-55).

Hisada et al., however, do not disclose or suggest a mutual authentication process between first and second data processor means including 1) first authentication by passing and comparing first data between the immobilizer unit and the portable unit and 2) second authentication by passing second data between the immobilizer unit and the portable unit, as required by claim 1. Hisada et al. are silent regarding these features. Thus, Hisada et al. cannot provide the features of claim 1 which are missing from Tsuji et al. Accordingly, allowance of claim 1 is respectfully requested.

Although not identical to claim 1, claims 2-4 include features similar to claim 1 which are neither disclosed nor suggested by the cited art. Accordingly, allowance of claims 2-4 is respectfully requested for at least the same reasons as claim 1.

Claims 5-24 include all of the features of respective claims 1-4 from which they depend and are patentable over the cited art for at least the same reasons as respective claims 1-4.

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In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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